1979 CONE CROP BULLETIN

BRITISH COLUMBIA / YUKON TERRITORY

87-01267/

Introduction

In British Columbia, about 110,000 ha of forest land is clearcut annually. The backlog of land deforested by logging, fire or insect, which has not been satisfactorily restocked, is almost 1 million ha. While natural regeneration is expected to occur on most of the denuded lands, 59.7 million seedlings were produced by B.C. Forest Service nurseries and outplanted in 1978 (Table 1). In 1976 1,106 kg of seeds were used in the nurseries. In 1977, the seed sown increased to 1,232 kg and in 1978 to 1,237 kg (Table 2).

Table 1. Outplanting by species in 1978

Species	%	No. of seedlings in 1000's
Interior spruce	43.3	25,850
Douglas-fir	24.4	14,567
Lodgepole pine	16.4	9,791
Western hemlock	9.9	5,910
Sitka spruce	1.8	1,075
All other species	4.2	2,507
TOTAL	100.0	59,700

About 20,000 kg of seeds is usually kept in storage at the Koksilah Seed Centre for the provincial reforestation program. This represents a potential of more than 2 billion seedlings. Enough to sustain the reforestation program at its present level for almost 20 years. But each year several million more seedlings are needed than the year before. Moreover, direct seeding may play a much greater role in the future on areas where natural regeneration is presently relied upon. Direct seeding requires about 5 times as much seed to reforest a given area.

Such a vast reforestation program, spread throughout the province, requires collection (Table 3), processing, storage and sowing of hundreds of tree seed provenances, separated by species, zones and elevations. There is also a constant need to replace seed which are old and losing viability, or are of poor or questionable genetic quality, and to collect seed for zones and elevations where supplies are exhausted.

There are shortages of much needed species and provenances. As the logging in high elevations is rapidly accelerating, so are the seed requirements of high elevation provenances.

The cone crops of coniferous trees are generally infrequent and often fail because of adverse weather, insects or diseases. When crops do occur, cones must be collected usually within a 2- to 3-week period of their maturity. A successful collection depends on advance planning which, in turn, requires accurate and timely information on developing cone crops.

The CONE CROP BULLETIN for British Columbia and the Yukon Territory is intended to be a comprehensive record of the past cone crops. As such, it should provide, in time, a base for studies

Table 2. Amounts of seed by species used in 1978 and the numbers of 1-0 usable seedlings produced. Total of 1,237 kg of seed used.

Species	%	Amount in kg	No. of Seedlings in 1000's
Coastal D. fir	17.4	215.4	16,978
Interior D. fir	3.1	38.4	3,002
Sitka spruce	2.7	33.4	2,586
Interior spruce	54.4	672.9	52,656
Lodgepole pine	9.4	116.3	9,151
Western hemlock	9.3	119.0	9,043
Mountain hemlock	0.6	7.4	553
W. red cedar	1.5	18.6	1,420
Yellow cedar	0.1	1.2	114
Amabilis fir	0.4	5.0	386
Grand fir	0.3	3.7	257
Western larch	0.5	6.2	458
Ponderosa pine	0.1	1.2	138
Other species	0.2	2.4	178
TOTAL	100.0	1,237.0	96,848

Table 3. 1978 Cone Collections (hectolitres)

Species	Forest Service	Industry	Seed Dealers	Total
Douglas fir	1547.6	497.1	1737.0	3781.7
W. Hemlock	144.0	240.0	0.5	384.5
M. Hemlock	12.9	2.7	–	15.6
Amabilis fir	238.9	527.1	–	766.0
Grand fir	239.5	18.8	102.0	360.3
Alpine fir	447.5	9.6	–	457.1
Sitka Spruce	3.2	15.3	–	18.5
Interior Spruce	118.7	38.3	–	157.0
W.R. Cedar	95.6	70.9	4.5	171.0
Yellow Cedar	30.8	7.6	–	38.4
Lodgepole pine	526.3	156.4	2073.0	2755.7
Ponderosa pine	64.1	0.5	–	64.6
White pine	14.7	17.5	–	32.2
Whitebark pine	7.0	0.8	–	7.8
W. Larch	82.0	4.0	–	86.0
Birch	0.9	–	–	0.9
TOTALS	3573.7	1606.6	3917.0	9097.3

of cone crop periodicity so that through understanding of the reproductive process, reasonably accurate and timely predictions of cone crops could be made.

The bulletin is produced jointly by the Canadian Forestry Service and the British Columbia Forest Service, in cooperation with the Yukon Lands and Forest Service and the forest industry.

Explanation of Cone Crop Ratings

Cone crop ratings are based on visual subjective determination of cone crop abundance. The ratings are usually taken on trees along roadsides or other stand edges. Observations are made from the ground, although helicopters are occasionally used. The practice of rating trees with greater exposure to sunlight may tend to overestimate the cone

Crop Rating	Criteria
1 - no crop	No cones on any trees
2 - very light	Few cones on less than 25% of trees
3 - light	Few cones on more than 25% of trees
4 - light	Many cones on less than 25% of trees.
5 - medium	Many cones on 25-50% of trees
6 - heavy	Many cones on more than 50% of trees
7 - very heavy	Many cones on almost all trees

crops. However, the crowns of these trees are more visible, permitting more accurate rating. It is also from these trees that cones are often collected and natural regeneration occurs.

On the following pages are presented the 1978 cone crop ratings for natural stands divided by tree seed regions and, within region, by species, seed zone and elevation. Ratings for seed orchards are shown separately. A verbal summary follows the tabular data for each region. The limited information available for the Yukon Territory is presented in a single table by species and ecoregions because seed zones have not been delineated. The maps of B.C. Forest Service regions and zones and Yukon ecoregions are presented on the centre page.

In the tables seed zone ratings are presented sequentially in rows. Ratings for species are shown in columns which are sub-divided by elevational bands coded as follows:

Code	Elevational Range
1	0-300 m (0-985 ft)
2	301-600 m (985-1970 ft)
3	601-900 m (1970-2955 ft)
4	901-1200 m (2955-3940 ft)
5	1201-1500 m (3940-4920 ft)
6	1501-1800 m (4920-5905 ft)
7	above 1800 m (above 5905 ft)

The tabular data are averages of all rating reports received for the indicated seed zone, species and elevation band. The number in brackets appearing above each rating indicates the number of reports on which the average is based.

Cone crop ratings are collected in June and July and are an indication of the relative abundance of cone crops only. An abundant cone crop does not necessarily mean a high seed yield. The quantity and quality of seed in the cones must be determined by sampling cone contents.

Table 4. Cone Collection from seed orchards, parent trees and Seed Production Areas (hectolitres).

Species	Forest Service	Licensees	Total
Douglas-fir	60.4	177.0	237.4
W. Hemlock	–	6.5	6.5
Sitka Spruce	–	4.9	4.9
Grand fir	3.9	–	3.9
	64.3	188.4	252.7

In the Yukon 98 hl of lodgepole pine cones were collected by a seed dealer.

Yellow cedar

WEST COAST REGION

In seed zone **1010** cone crops of **Douglas-fir, western hemlock, mountain hemlock** and **western red cedar** were generally light at all elevations. On **Douglas-fir** a medium crop was noticed only at Ash River and Franklin River at elevations of 600 to 800 m; on **western hemlock**, a medium crop was reported from TFL 21 CP 16 and 17 at 300 to 500 m, CP1 at 800 to 900 m and along Loup Creek at 300 m. **Red cedar** had a medium crop at Sombrio River at 300 to 400 m, and **mountain hemlock** a heavy crop at Lazar Mountain at 850 m. The crop on **Yellow Cedar** was generally very light. **Amabilis fir** had a medium crop throughout the 1010 zone with the exception of Tahsis and Nootka where about half of the reports indicated a light or very light crop. A heavy cone crop was reported in T.F.L. 21, CP 13 at 250 m. **Sitka spruce** and **lodgepole pine** had very light or nil crops.

In the zone **1020** on **Douglas-fir** about 40% of the reports indicated a medium crop while 50% reported a light crop. Heavy crops were reported by C.F.P. in CP 3 in 3 locations at 200 to 300 m. **Western hemlock** had generally light crop at low elevations. The exceptions were Banon Creek with medium crop and C.F.P. CP 3 with heavy crop below 300 m. A heavy crop also occurred at Compton North, Kinman Creek, C.F.P., CP 3 and throughout M & B, CP 19 at elevations of 450 to 600 m. At elevations between 600 and 850 m medium crops were reported at TFL 7, CP 11, and TFL 39, CP 12, 15 and 19, at CFP, CP 3 in 3 locations and at Weldwood CP 3. At elevations of about 1,000 m a medium crop occurred at CFP, CP 1 and 3, and at M & B TFL 19, CP 19 and at Green Mountain **Mountain hemlock** cone crops were reported light in all locations. Most **western red cedar** crops were rated as light. Heavy crop occurred at Qualicum Golf Course at 10 m, very heavy crop at Mud Bay at 100 m, medium crop at CFP, CP 3 at 200 m, 300 m and 500 m and along Harry Road, in CP 1 along Kinman Creek at 350 m and on Coronation Mountain. The **Yellow Cedar** cone crop was reported generally light. **Amabilis fir** had a medium to heavy crop everywhere at elevations below 600 m. That included M & B, TFL 39, CP 12; 4 locations in CP 15; 5 in CP 19; CFP, 2 locations in CP 3, one in CP 12, and 2 locations along Qualicum River. Above 600 m the cone crop was reported light, with only 3 exceptions, namely M & B, TFL 39, CP 15 at 700 to 780 m; in TFL 7, CP 11 at 650 m and at CFP CP 1 along Kinman Road at 980 m. **Grand fir** produced an excellent crop in all reported locations. Duncan Bay - heavy at low elevations, Campbell Lakes - medium at all elevations below 310 m, Skutz Falls - heavy at 170 m and 130 m, Cowichan Highway - heavy at several locations around 100 m, Mud Bay - medium at 100 m, Cameron Lake and Bain Bridge - medium below 300 m, Ranger District 19 reported very heavy crop in Block 18 at 350 and 400 m. On **Sitka spruce** a heavy cone crop occurred in Ranger District 15 in CP 3 at 200 m and a medium crop at Qualicum River at 400 m. **White pine** had a medium crop on Coronation Mountain at 850 m.

In Seed Zone **1030, western hemlock** had generally a nil crop at low elevations and a light crop between 300 and 600 m. **Amabilis fir** had a very light crop. Only Kingcome Inlet reported medium crops at several elevations below 300 m.

In zone **1040** the **Douglas-fir** crop was variable with most areas reporting nil to light crop. Only Lund and Halfmoon Bay had medium crop at 300 m, Texada Island a heavy crop at 100 m, Horseshoe Creek medium crop above 500 m, Gray Creek on Quadra Island very heavy crop at 550 m and medium at 750 m. Most reports on **western hemlock** indicated nil crop. However, on Quadra Island along the main road at 150 m and 350 m and along Parkdale Creek at 300 m the crop was rated as medium. The crop on **mountain hemlock** was generally light. **Western red cedar** had a medium crop at Halfmoon Bay at 300 m on Texada Island at 100 m, at Duck Lake at 600 m and a heavy crop at mile 6 Elphinstone Road. The rest of the numerous reports indicated light or nil crop. The crop on **Yellow cedar** was nil throughout the zone. The **Amabilis fir** crop was generally light. On Quadra, at South Main and at Campbell River, TFL 39, CP 2 it was medium at elevations of 100 to 250 m. A medium crop was also reported on Estero Peak at 770 m. **Grand fir** produced a medium crop on Texada Island at 30 m, at Halfmoon Bay at 0 - 300 m and a heavy crop at Sechelt at 200-300 m.

In the zone **1050 Douglas-fir** crop was generally good in spite of a few nil reports. A medium crop occurred opposite Billygoat Creek at 250 m, River Creek at 175 m, at Harrison Lake at 150 m, along Cogburn Creek at 200 m, along Furry Creek at 700 m, at Garibaldi Park base camp at 1050 m, at Bear Creek at 1000 m, in the Cypress Bowl water-

WEST COAST REGION

SPECIES	Douglas-fir				Western hemlock				Mountain hemlock			Western red cedar			Yellow cedar		
Elevation code	1	2	3	4	1	2	3	4	3	4	5	1	2	3	3	4	5
Seed zone																	
1010	(3) 2.7	(5) 3.4	(7) 3.3	(1) 4.0	(9) 3.6	(14) 3.6	(9) 4.1		(1) 6.0	(2) 3.0		(4) 2.0	(5) 2.8	(2) 3.5	(4) 3.0		
1020	(19) 4.2	(4) 4.5	(7) 4.1		(7) 3.7	(9) 5.6	(9) 4.6	(4) 4.8	(2) 4.0	(5) 3.0		(10) 4.6	(5) 4.0	(1) 5.0	(6) 3.5	(3) 3.0	
1030					(3) 1.3	(2) 4.0											
1040	(9) 3.2	(18) 2.7	(7) 3.5	(1) 1.0	(3) 4.3	(9) 1.9	(4) 1.0	(1) 1.0	(3) 3.3	(1) 2.0	(1) 2.0	(4) 4.5	(10) 2.4	(7) 2.3	(3) 2.3	(1) 2.0	(1) 2.0
1050	(5) 3.4	(2) 3.0	(4) 3.8	(5) 5.0	(7) 2.9	(1) 1.0	(7) 3.4	(6) 3.8		(2) 5.0	(4) 4.3	(4) 2.0	(4) 4.8	(1) 4.0		(1) 4.0	(2) 5.0
1060	(1) 6.0	(1) 6.0	(3) 3.0					(1) 5.0					(2) 6.0	(1) 6.0			
1070	(3) 3.7	(5) 5.0	(6) 4.0	(2) 5.5			(3) 2.7	(1) 2.0		(4) 4.3	(2) 4.5	(1) 6.0	(2) 5.5	(4) 5.5		(2) 4.0	(1) 5.0
1080			(1) 4.0		(2) 4.5	(1) 5.0						(3) 5.7	(4) 3.5		(2) 2.0		
1090					(1) 5.0							(1) 6.0	(1) 5.0				
1110						(1) 2.0											
1120																	
1130					(1) 5.0												
1140					(7) 3.9												
1150					(1) 2.0	(4) 4.0											

Amabilis fir					Alpine fir				Grand fir		Interior spruce		Sitka spruce		Lodgepole pine		White pine	
1	2	3	4	5	1	2	3	4	1	2	3	4	1	3	2	3	3	4
(11) 4.5	(16) 3.3	(8) 3.4		(1) 5.0				(1) 2.0					(1) 2.0		(1) 3.0			
(3) 5.7	(11) 5.4	(9) 3.4	(9) 3.3						(9) 5.4	(2) 5.0			(2) 5.5				(1) 5.0	
(27) 2.4	(4) 2.0	(1) 2.0																
(2) 5.0	(4) 2.5	(6) 2.8	(5) 4.0	(1) 1.0					(3) 5.3				(1) 4.0		(1) 2.0			
	(4) 3.0	(4) 4.3	(3) 4.3	(3) 5.0					(4) 5.0								(1) 3.0	
			(2) 5.0	(2) 4.0				(2) 3.5	(1) 6.0	(6) 5.4		(5) 3.8				(1) 3.0		(1) 4.0
		(3) 5.3	(3) 5.0	(3) 6.0			(7) 2.6	(2) 6.0	(1) 6.0		(4) 5.0	(1) 2.0			(1) 3.0			
(2) 5.5														(1) 6.0				
													(3) 3.0					
(2) 7.0					(1) 7.0								(1) 4.0					
													(2) 2.5					
					(1) 3.0								(3) 5.0	(1) 2.0				
					(1) 5.0	(2) 5.5		(1) 2.0			(8) 3.2				(4) 3.3			

shed at 950 m. **Western hemlock** produced a light crop in most locations. Only Alouette Lake at 200 m and Ring Creek at 700 m reported a medium crop. A medium crop was reported on **Mountain hemlock** at Middle River at 950 m, at Maisal Creek at 1130 m and on Brohm Ridge at 1300-1500 m. Other 4 reports indicated only light crop. The **Western red cedar** crop was light to nil in most locations. Only Malnquam River had a heavy crop at 420 m and a medium crop at 500 to 600 m. A medium crop also was reported at Kesakwatch Creek at 300-600 m. **Yellow cedar** had generally a light crop throughout the zone. Only on Brohm Ridge the crop was reported heavy at 1350-1400 m. **Amabilis fir** had a light crop at elevations below 600 m. At higher elevations medium crops were reported at Bear Creek at 600 to 800 m, at Lost Creek at 800 to 900 m, at Garibaldi Park base camp at 1050 m. Heavy cone crops occurred at Brohm Ridge at 1200 m, at 2 locations at 1500 m and at 1300 to 1400 m. **Grand fir** had a medium crop at various places around Chilliwack at elevations up to 500 m.

In zone **1060 Douglas-fir** had a heavy crop around Boston Bar at 200 m and along Nahatlatch Road at 300 - 450 m. Higher elevations had only a light crop. **Western hemlock** was reported only at Big Silver Creek drainage having medium crop. **Western red cedar** had a heavy crop at Dewdney along Anderson Road at all elevations from 300 to 650 m. **Amabilis fir** had a medium crop in Big Silver Creek drainage at 1100 m and at Silverhope at 900-1050 m. Locations round Dewdney reported a light crop. The cone crop on **grand fir** was reported only from Dewdney area. All locations had medium or better crops; heavy crop was at Coquihalla at 185 m, along Anderson Road at 400-500 m and in the Skagit River basin at 500 to 600 m. **Engelmann spruce** in Dewdney PSYU had generally a light crop with only Manning Park reporting medium crop at 1000-1100 m.

In zone **1070 Douglas-fir** had generally a good crop. Medium crops were reported from Twin Ore Creek and Lillooet at 200 m, at Poole Creek at 550 m, Tisdall at 350 m, Mud Creek at 500 m, Owl Creek at 400 m, Devine Creek at 800 m, High Falls at 900 m, along Birkenhead Rd at 700 m, and North Creek at 850-950 m. Heavy crop occurred at d'Arcy at 400-450 m. **Western hemlock** crop was generally light. **Mountain hemlock** produced medium crop at upper Squamish River at 1100 m, in Weldwood TFL 38, Branch 913 at 1200 m, on Brohm Ridge at 1400 m and 1500 m. The **Western red cedar** crop was good everywhere. Heavy crop was reported along Lillooet River Forest Road at 375 m, Meager Creek at 760 m, and North Creek at 800-900 m. Medium crops occurred in Block 50 and 67 in TFL 38 at about 500-600 m, at North Creek at 900-1000 m, Pebble Creek at 750 m and at Meager Creek at 600-750 m. **Yellow cedar** had a medium crop at Owl Creek at 1100 m and above 1200 m. All reports on **amabilis fir** indicated a good crop. Medium crop occurred at Meager Creek at 900 m at upper Squamish at 1100 m, at Railway Creek at 1010 m and at north Squamish at 1200 m. Heavy crops were reported around Lost Lake at 750 m and on Brohm Ridge in all stands from about 1300 to almost 1600 m. **Sub-Alpine** fir had a heavy crop along upper Owl Creek at 1000-1100 m and generally a light crop below 1000 m elsewhere. **Grand fir** had a heavy crop at Chekamus River. Other locations were not reported. **Engelmann spruce** had a medium crop on Whistler Mountain at 650 m to 750 m, at Birkenhead at 750 m and along Mons Creek at 700 to 800 m.

In zone **1080, western hemlock** produced a medium crop at Orford River at 200 m and at 400-500 m. The **Western red cedar** crop was rated as medium at Teaquahan River at 100-200 m but only light above 400 m. Other reports indicated only a light crop. **Amabilis fir** had a heavy crop at Oxford Bay and Orford River up to 200 m. **Sitka spruce** produced a heavy crop at Southgate River at 200-300 m.

In zone **1090 western hemlock** had a medium crop at Nusatsum River at 150 m and **western red cedar** at 150-350 m.

In zone **1120 amabilis fir** had a very heavy crop at Meziaden Lake and Surprise Creek at about 300 m.

In zone **1130 western hemlock** had a medium crop along Robinson Lake road while all other species, at all locations recorded, had only light crop.

In zone **1140**, on **western hemlock** medium crop was reported from Chindemash Road area and Kalum Lake at about 150 m. Other locations reported only a light crop. **Sitka spruce** had a medium crop along Shames River at 75 m Tshkheenickh River at 50 m and Dasque Creek at 100 m.

In zone **1150 western hemlock** produced medium crop at East Skeena crossing at 350 m and at Sedan Creek at 400-500 m. **Amabilis fir** was

reported to have a medium crop at Cedarvale at 100 m, while **subalpine fir** had a medium crop at Swordgrass Lake at 500 m and heavy crop in Nash area at 550 m. **White spruce** crop was generally light. Medium crop was report on at the Kispiox River. Lodgepole pine reports also indicated a light crop, except on mile 12 on Kitwanga Road.

SOUTHERN DRY REGION

In the Southern Dry Interior in the **2010** seed zone all reports on **Douglas-fir** indicated a very good crop year. Midway at 670 m, Greenwood at 760 m, Westbridge at 770 m, Anarchist Mountain at 1220 m all had heavy crops, while very heavy crop was reported along Mulligan Creek at 730 m, at Conkle Lake at 1000 m and along Boundary Creek at 1350 m. **Interior spruce** had very heavy crop along Conkle Lake Rd at 975 m and along Boundary Creek at 1350 m. **Western larch** had a medium crop at Anarchist Mtn. at 1220 m.

In zone **2020 Douglas-fir** had a medium crop on Dike Mountain at 1370 m, **Interior spruce** had a medium crop along Smith Creek at 1370 m and at Similkameen, Northwood CP 44 at 1680 m. Otherwise the crop was light.

In zone **2030** a few reports indicated a light crop on **Douglas-fir** but generally the crop was good. Very heavy crop occurred at Oyama Lake Rd. at mile 3 at 800 m, at Kipola Lake Rd. at 750 m, at Twin Lakes at 875 m, along Whiteman Creek Rd. at 760 m and Turnbull Rd. at 600 m. Heavy crop was recorded along Scotch Creek Rd. at 600 m, at Lost Mountain at 800 m, at Postill Lake Rd. at 675 m, at Priest Creek at 750-1250 m, McDougal Creek, at 800-1250 m, at Myra Creek at 900-1200 m, at Davis Creek at 1100 m, at Irish Creek at 450 m, at Rose Swanson Mountain at 500 m and along Cedar Hill Road at 550-650 m. Medium crop at Arawana at 650-1100 m, at Whiteman Creek at 700 m, at Twin Lakes at 850-950 m, on Trout Lake Main Rd. at 1100-1250 m and at Baldy Creek at 1000-1200 m. **Western red cedar** crop was rated heavy along Whiteman Creek at 900 m while other ratings indicated only a light crop. **Interior spruce** had a heavy crop along Shuttleworth Creek at 700-900 m, along Fairview Rd. at 700-850 m, at Glenfir at 900 m, at Taylor Lake at 1375 m and at Fish Creek at 1300-1500 m. Medium crop occurred at Whiterocks at 1300 m and Whiteman Creek at 1600 m. Other areas reported light or no crop. **Yellow pine** had a medium crop at Glenfir at 550-650 m and at O'Henry at 750-850 m. **Western larch** was reported to have a medium crop only at Baldy Creek at 1000-1100 m. Other areas had either nil or very light crop. **Alpine fir** had a generally heavy crop below 1500 m but only light crop higher. Heavy crop was reported around Gemill Lake at 1100-1450 m, along Fish Creek at 1200-1500 m, along Naramata Creek at 1400-1500 m and O'Hagan Creek at 1300-1500 m.

In zone **2040 Douglas-fir** crop was good below 1200 m and light at higher elevations. Very heavy crop was reported at mile 7 Douglas Lake Rd. at 760 m. Heavy crop along Prospect Creek Rd. at 800 m and medium crop near McLure log dump at 350 m, at Niskonlith Lake at 600 m, along Campbell Rd. at 700 m, Salmon River Rd. at 750 m, at Lundbom at 1150-1250 m, at Noble Lake at 850-1120 m, on Duck Hill at 800-1200 m, along Wentnorth Creek at 1075-1250 m, and Knouth Lake Rd. at 900-1000 m. **Interior spruce** produced generally a light crop. However, in Kamloops PSYU a medium crop occurred in a number of locations at 1200-1350 m. **Lodgepole pine** crop was generally light or very light. Only north of Paradise Lake and at Windy Lake the crop was medium at elevations of 1500-1550 m. **Yellow pine** had a medium crop south of Merritt at 850-1050 m and Niskonlith at 1100 m. The rest of the zone had a light crop.

In the seed zone **2050** Douglas-fir crops covered all the range from nil to medium with medium reported from Izman Creek at 900 m, at Loon Lake at 1070 m, Maiden Creek at 1100 m and at Barnard Creek at 1000 m and 1330 m. **Interior spruce** crop was generally light to nil. Medium crop was reported at Donald Creek at 1250 m only. The **Lodgepole pine** crop was generally good where reported. Nicoamen River at 1070 m and Hibium at 1250 m reported medium crop. **Yellow pine** had a medium crop at Twaal Creek at 900 m.

SOUTHERN DRY REGION

	Douglas-fir						Western red cedar		Interior spruce				Lodgepole pine			Yellow pine			White pine	Larch		Alpine fir		
Elevation code	2	3	4	5	6	7	4	5	3	4	5	6	4	5	6	2	3	4	5	4	5	4	5	6
Seed zone																								
2010		(4) 6.3	(1) 7.0	(2) 6.5						(1) 7.0	(1) 7.0									(1) 5.0				
2020				(1) 5.0							(3) 3.7	(2) 4.0												
2030	(2) 4.5	(12) 5.7	(8) 5.3	(1) 6.0	(2) 6.0	(1) 7.0	(1) 6.0	(4) 3.0	(3) 6.0		(6) 3.7	(4) 3.0		(2) 1.5		(1) 5.0	(1) 5.0				(2) 3.0	(3) 1.3	(1) 6.0	(3) 6.0	(1) 2.0
2040	(3) 4.7	(4) 5.8	(5) 4.6	(4) 3.0	(1) 3.0				(1) 4.0	(4) 2.3	(7) 3.4		(4) 2.0	(2) 2.5	(5) 3.4			(5) 4.2						
2050		(4) 4.0	(6) 4.2							(2) 1.5	(7) 2.6	(4) 2.8	(2) 4.5	(1) 5.0			(1) 5.0							
2060	(1) 6.0	(9) 4.8	(6) 3.3	(1) 5.0					(1) 5.0	(1) 5.0	(11) 2.8	(3) 3.0		(1) 3.0	(1) 3.0		(1) 5.0		(1) 5.0					(3) 5.6

In the zone **2060 Douglas-fir** cone crop was generally good, with heavy crop on Texas Creek Rd. at 450-550 m, 30 miles West of Pavilion at 700-900 m, at Audrey Creek at 650-750 m, at McGillivary Creek at 750-950 m and Haymore Creek at 650 m. Medium crops occurred at Pavilion at 700 m, at Retaskit at 650-750 m, at Carpenter Lake at 750 m, at Camoo Creek at 800-1000 m, at Anquitoit Creek at 950 m and at Crown Lake at 1220-1350 m. **Interior spruce** produced a medium crop at lower elevations, whereas elevations higher than 1400 m had generally a light crop. Medium crop was recorded at Gott Creek - Cayoosh Junction at 800-950 m, at Beaudown at 800-1200 m, Leon Creek at 1300-1400 m and Enterprise Creek at 1150-1250 m. **Yellow pine** had a heavy crop at Lee Creek at 700-800 m. **White pine** produced a medium crop in the vicinity of Duffey Lake at 1220-1370 m. **Alpine fir** produced a good crop everywhere, Truax Creek had a medium crop at 1450-1700 m and Casper Creek and McKay Creek had heavy crops at 1350 to 1700 m.

INTERIOR WET REGION

In the seed zone **3010 Douglas-fir** was reported to have a medium cone crop only at Big Sheep Creek at about 1500 m. **Interior spruce** produced a locally medium crop at the headwaters of Murphy Creek above 1500 m. **Western larch** was reported to have a very heavy crop at Mt. Sophia above 800 m and at Murphy Creek at 1450 - 1550 m. **Western white pine** had a medium crop at Mackie Mountain at 900 m. The **Western larch** crop was generally light or nil.

In the seed zone **3020 Douglas-fir** had a medium crop at Samea Creek at 750 m and **Interior spruce** a heavy crop at Whitewater at 950 - 1000 m. All reports on **Grand fir** indicated a medium to heavy crop. Karier Creek at 650 m, Upper Long Branch at 600 - 700 m and Red Fish Creek at 1000 - 1150 m.

In the zone **3040** the crop of **Douglas-fir** was generally good. Very heavy crop was reported from Yard Creek and along Federated Co-op Rd., both at 750 m. Heavy crops at Sicamous at 450, at Yankee Flats at 600 m and 700 m, at Trinity Valley and Squaw Valley, both at 600 - 700 m, west of Sicamous at 700 m, at Harris Creek at 900 - 1000 m, at White Lake at 400 - 500 m and at Cherryville at 500 - 600 m. Medium crops occurred east of Enderby at 500 - 600 m, north of Sicamous at 1000 - 1100 m, Salmon Arm at 950 - 1100 m, Mara Creek at 1050 and at Shuswap at 900 - 1100 m. A number of reports indicated a light, but possibly collectable crop. **Interior spruce** covered the whole range of ratings but averaged only light. Heavy crops were reported at Mara Creek at 1050 m and mile 10 Yankee Flats at 1500 m. Medium crops occurred at Scotch Creek at 1000 - 1100 m, at Raft at 1200 - 1250 m, at Clearwater and Graffunder Lakes at 1500 m, along Vegetation Creek at 1500 m and at Bonneau Lake at 1500 - 1600 m. **Western red cedar** had a heavy crop at Sicamous at 450 m and along Queest Mountain Road at 750 - 1150 m. **Western hemlock** produced heavy crops along Kingfisher Creek Road at 550 m and a medium crop at Hidden Lake at 600 m, and Yard Creek - Sicamous at 700 m and at Salmon Arm at 1000 m. **Western Larch** produced a medium crop at Salmon Arm at 1100 m.

In the zone **3050** heavy crop on **Douglas-fir** was noticed at Samatosum at 500 - 600 m and medium crop at McTaggart Lakes, Lomien Creek at 800 m and Raft River at 1250 m. **Interior spruce** had generally a light or nil crop except in TFL 18 Road 7 where the crop was reported medium. **Western hemlock** had a medium crop along Murtle Lake Rd. at 900 - 1000 m.

In seed zone **3070** Douglas-fir had a heavy crop at Washad Creek at 1000 m.

In zone **3080 Alpine fir** had a medium crop at Bell Mountain at 1000 m.

In zone **3090 Alpine fir** produced a medium crop at Keithly Creek at 1100 m and at Bootjack Lake at 1000 m. **Lodgepole pine** was reported to have a medium crop at Moffat Creek at 1200 m, at 5-mile Lake at 1050 m at Quesnel Lake at 1050 m, along Maeford Lake Rd. at 1050 m and at Moffat Lake at 1350 m. Reports from other seed zones indicated only a light or nil crop on all species.

INTERIOR WET REGION

	Douglas-fir				Interior spruce				Western red cedar					Western hemlock			Alpine fir			Grand fir		Lodgepole pine		White pine	Larch			
Elevation code	2	3	4	5	3	4	5	6	2	3	4	5	6	2	3	4	3	4	6	3	4	4	5	4	3	4	5	6
Seed zone																												
3010		(1) 3.0		(1) 5.0				(1) 4.0					(1) 4.0				(1) 7.0		(1) 7.0					(1) 5.0	(1) 2.0	(1) 3.0	(1) 3.0	(1) 2.0
3020		(1) 5.0				(1) 6.0													(1) 3.0	(2) 6.0	(1) 5.0							
3040	(4) 5.3	(9) 4.9	(14) 4.3	(1) 2.0		(8) 3.4	(11) 3.7	(3) 1.7	(2) 5.5	(1) 3.0	(2) 5.0	(1) 1.0		(2) 5.5	(2) 3.5	(3) 3.7									(1) 3.0	(5) 3.6		
3050	(1) 6.0	(5) 4.4	(2) 3.5	(1) 5.0	(2) 2.0	(5) 3.2	(3) 2.0				(1) 4.0	(1) 4.0				(1) 5.0							(2) 3.5				
3070			(2) 5.0																									
3080					(2) 1.5	(2) 1.0											(2) 4.5											
3090		(2) 2.5	(1) 4.0		(1) 2.0	(3) 2.7											(2) 5.0					(7) 4.1	(4) 3.8					
3100					(2) 2.0	(13) 1.9		(2) 2.0														(2) 3.0						
3110					(1) 2.0	(2) 1.0											(1) 3.0											

KOOTENAY DRY REGION

Douglas-fir had a heavy crop in zone **4010** at Cootcamisa Lake along Jaffray Rd. and Elko Overpass, all at 750-850 m, in seed zone **4020** along Mt Swansea Rd. at 950 m and in zone **4030** along Lost Dog Creek at 800 m, at Premier Lake at 750-950 m, in Kikomun Provincial Park at 750-850 m, Grasmere at 800 m, Baynes Lake at 800 m, Wigwam at 1150 - 1200, Lazy Lake - Estella Rd. at 1000 m and at Palliser at 1100 m. In zone **4030 interior spruce** had a medium crop at Tornado Creek and at Wigwam, both at 1000 m. **Alpine fir** had a medium crop at Gilnockie Creek at 1350 - 1500 m, at Lodgepole and Harvey Creeks at 1300 - 1750 m and Ram Creek at 1700 m.

	Douglas fir		Interior Spruce	Larch		Alpine Fir	
Elevation code	3	4	4	3	4	5	6
Seed zone							
4010	(3) 6.0				(1) 3.0		
4020		(2) 6.0					
4030	(4) 6.0	(3) 5.3	(2) 5.0	(2) 3.0	(2) 3.0	(2) 5.0	(1) 5.0

CENTRAL DRY REGION

In the seed zone **5010 Douglas-fir** had a medium crop at Macalister at 550 m, while in the rest of the zone the crop was very light. **Interior spruce** and **lodgepole pine** crops were reported light. **Alpine fir** had a medium crop at Lac La Hache at 1450 m.

In the zone **5020 Douglas-fir** had a medium crop at Bucksin at 500 m and Gaspard Creek at 800 m. Other reports indicated generally a very light crop.

In zone **5030 Alpine fir** produced a medium crop west of Quesnel at 1175 m.

In zone **5050, 5060** and **5070 Douglas-fir** had a very light crop and **interior spruce** a light one.

In the zone **5070, Alpine fir** produced a medium crop along Trophy Lake Rd. and near Byman Cr., both at 950 m.

In the zone **5080 western red cedar** had a medium crop at 12-mile Rd. at 400 - 500 m and **white spruce** medium crop at China Creek at 400 m. Many reports on spruce indicated a light crop. **Alpine fir** produced a good crop below 900 m but at higher elevations the crop was only light. A heavy crop was recorded at Glacier Gulch at 800 - 900 m and at Chapman Lake at 700 - 800 m while moderate crop was noted at Telkwa River at 700 m and at F.D.R. at 700 - 800 m.

CENTRAL DRY REGION

	Douglas-fir			Western red cedar	White spruce				Lodgepole pine	Alpine fir		
Elevation code	2	3	4	5	2	3	4	5	2	3	4	5
Seed zone												
5010	(2) 3.5	(3) 2.0	(2) 2.0			(4) 2.8			(1) 4.0			(1) 5.0
5020	(2) 4.0	(9) 2.4										
5030	(3) 2.3					(2) 2.0					(1) 5.0	
5050	(10) 1.9					(13) 2.8	(3) 2.0					
5060			(1) 4.0			(3) 2.3	(1) 2.0				(1) 2.0	
5070			(1) 4.0			(4) 2.0	(1) 2.0				(2) 5.0	
5080				(1) 5.0	(1) 5.0	(11) 2.7	(8) 1.8	(1) 2.0		(4) 5.5	(3) 3.0	

SUB BOREAL REGION

	Douglas-fir		White spruce				Lodgepole pine	Alpine fir	
Elevation code	3	4	2	3	4	5	4	3	5
Seed zone									
6010			(1) 3.0	(4) 1.5	(7) 2.3	(2) 1.5			
6020				(3) 1.7					
6030				(2) 1.5	(1) 2.0				
6040				(13) 1.4	(2) 1.5				
6050	(2) 3.0	(1) 4.0		(6) 2.0	(3) 2.7				
6060				(4) 2.5	(1) 2.0				
6070				(1) 3.0	(7) 2.3	(2) 2.0	(1) 3.0		(1) 3.0
6080				(5) 3.4	(5) 2.0			(4) 5.5	

SUB-BOREAL REGION

Many reports received on **white spruce** indicated generally a very light or nil cone crop. Only in the seed zone **6080** Bell Copper Heights - Granisle, was the cone crop rated heavy at 700 - 800 m. **Douglas-fir** crop was rated light. In the seed zone **6080** and probably throughout the region **Alpine fir** produced a heavy crop. Bell Copper Heights - Granisle had very heavy crop at 700 - 800 m, and a heavy crop was recorded north of Granisle and at Fort Babine both at 600 - 800 m.

	White Spruce				
Elevation code	1	2	3	4	5
7010			(2) 3.5	(8) 2.0	(1) 2.0
7020			(2) 2.0		
7030			(1) 2.0	(2) 2.5	
7040			(1) 1.0	(1) 2.0	
7070	(2) 4.0	(7) 3.9	(2) 2.0		
7080		(1) 4.0			

BOREAL REGION

Only **white spruce** crop was reported and it was generally rated as light to nil. Medium crops were reported in zone **7010** at Sukunka at 700 m, in zone **7070** along Fort Nelson River at 300 m and 400 m, Fontas River at 350 m and on Alaska Highway mile 324 at 500 m.

NORTHWEST PLATEAU

	White spruce
Elevation code	2
8050	(2) 3.0

YUKON TERRITORY

No reports on cone crops were received from Yukon Territory. Because collectable cone crops were always reported in the past, it is assumed that there was no collectable crop last year.

FOREST TREE SEED ZONES
OF BRITISH COLUMBIA
Forests should be established from local seed. Use of seed from other areas, where climatic conditions are different, may lead to plantation failure.
Seed zones have been established within broad biogeoclimatic regions as defined by Krajina (1972). They follow closely management (Public Sustained Yield Unit or Tree Farm License) boundaries. Seed should be used within the zone from which it was collected and within 150m of its original elevation.
SERIES | REGION NAME | NO OF ZONES
1000 West Coast 16
2000 Southern Dry 6
3000 Interior Wet 11
4000 Kootenay Dry 3
5000 Central Dry 8
6000 Sub-boreal 10
7000 Boreal 8
8000 NW Plateau 5
Scale
B.C. Forest Service
Reforestation Division
Consolidated May 1974
(Supersedes map of Nov. 1971)
PRINCE RUPERT
WILLIAMS LK.
VICTORIA

Reader's comments should be addressed to . . .

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